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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,349	03/25/2002	Hidekazu Uchiyama	4265-44WOUS	1471

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EXAMINER

NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/019,349

Applicant(s)

UCHIYAMA ET AL.

Examiner

Nguyen N Hanh

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-3 are objected to because of the following informalities: " a fieldmagneton" in claims 1-3 should be written as ---a field magneton---; "a boss rotor" in claim 2, line 15 should be written as ---a rotor boss---. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "a rotor rotatably arranged in one of an inside and an outside of said stator" while the specification does not disclose any structure with two rotors, one in an outside and one in an outside of the stator. Under the light of the specification, the Examiner interprets the limitation as "a rotor rotatably arranged in an inside of the stator or in an outside of the stator". It is also not clear about the limitation "a plurality of permanent magnets provided in said stator and magnetized at the same pole" as recited in claims 1-3. Under the light of the specification, the Examiner interprets the limitation as "a plurality of permanent magnets provided in said stator and display the poles to one direction"

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiyama in view of Okamoto and further in view of Rosenberg.

Regarding claim 1, Uchiyama shows an electric machine having a stator around which an armature coil is wound; a rotor rotatably arranged in an outside of said stator; the electric motor comprising: a field magneton including a plurality of permanent magnets (8 in Fig. 1a) provided in said rotor and magnetized at the same pole, and a plurality of control poles (9) made of a magnetic material and arranged between said permanent magnets; a field coil (17) forming a closed magnetic path passing through said control poles (Col. 4, lines 6-10); and a motor characteristic control means for changing a motor characteristic by controlling at least one of a direction and an amount of current flowing into said field coil, by changing a magnetic flux that said field coil generates, and by controlling an effective magnetic flux affected between said rotor and said stator (inherent as described in Col. 4, lines 45-55).

The structure disclosed by Uchiyama fails to show a rotor position detecting means for detecting a position of said rotor; and a current control means for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means and the electric motor is a brushless motor.

However, Okamoto discloses a brushless motor wherein a rotor position detecting means (14 in Fig. 2) for detecting a position of said rotor; and a current control means (16) for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means (Col. 3, lines 45-65) for the purpose of controlling motor characteristics.

Since Uchiyama and Okamoto are in the same field of endeavor, the purpose disclosed by Okamoto would have been recognized in the pertinent art of Uchiyama.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Uchiyama by a using rotor position detecting means for detecting a position of said rotor; and a current control means for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means as taught by Okamoto for the purpose of controlling motor characteristics.

Moreover, Rosenberg discloses that electrical machine with permanent magnet rotor can be made as a motor or a generator (Col. 1, lines 30-35) for the purpose of converting electrical energy to mechanical energy or on the contrary, from mechanical energy to electrical energy.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Uchiyama by converting generator to

brushless motor as taught by Rosenberg for the purpose of converting electrical energy to mechanical energy

Regarding claim 2, Uchiyama shows an electric machine having a stator constituted such that an armature coil is wound around a stator core having a gap at a central portion thereof (an inner peripheral portion of stator core 13 in Fig. 1 (a,b)); a rotor made of a magnetic material and including a bottom cylindrical yoke rotatably arranged outside said stator; the electric machine comprising: a field magneton including a plurality of permanent magnets (8 in Fig. 1a) provided in said rotor and magnetized at the same pole, and a plurality of control poles (9) made of a magnetic material and arranged between said permanent magnets; a rotor boss (6) made of a magnetic material, provided at the central portion of said rotor to project along an axial direction thereof, and arranged in said gap of said stator so as to have an air gap between said stator and the boss rotor; a field coil (17) arranged in said stator so as to face a bottom portion of said yoke in a state of being wound in a surrounding direction of said boss rotor, and forming a closed magnetic path passing through said boss rotor, said yoke, said control poles and said stator core (Col. 4, lines 4-10); and a motor characteristic control means for changing a motor characteristic by controlling at least one of a direction and an amount of current flowing into said field coil, by changing a magnetic flux that said field coil generates, and by controlling an effective magnetic flux affected between said rotor and said stator (Col. 4, lines 45-55).

The structure disclosed by Uchiyama fails to show a rotor position detecting means for detecting a position of said rotor; and a current control means for making a

Art Unit: 2834

current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means and the electric motor is a brushless motor.

However, Okamoto discloses a brushless motor wherein a rotor position detecting means (14 in Fig. 2) for detecting a position of said rotor; and a current control means (16) for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means (Col. 3, lines 45-65) for the purpose of controlling motor characteristics.

Since Uchiyama and Okamoto are in the same field of endeavor, the purpose disclosed by Okamoto would have been recognized in the pertinent art of Uchiyama.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Uchiyama by using a rotor position detecting means for detecting a position of said rotor; and a current control means for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means as taught by Okamoto for the purpose of controlling motor characteristics.

Moreover, Rosenberg discloses that electrical machine with permanent magnet rotor can be made as a motor or a generator (Col. 1, lines 30-35) for the purpose of converting electrical energy to mechanical energy or on the contrary, from mechanical energy to electrical energy.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Uchiyama by converting generator to brushless motor as taught by Rosenberg for the purpose of converting electrical energy to mechanical energy

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Okamoto.

Regarding claim 3, brushless motor having a stator including a stator core (42 in Fig. 5 and 6) around which an armature coil (43) is wound, and a bracket (41) which holds said stator core and is made of a magnetic material (Col. 5, line 60); a rotor made of a magnetic material and including a rotor core (50) rotatably arranged inside said stator; the brushless motor comprising: a field magnet on including a plurality of permanent magnets (54) provided in said rotor and magnetized at the same pole, and a plurality of control poles (49) made of a magnetic material (Col. 5, lines 69-75) and arranged between said permanent magnets; a magnetic path forming member (47a) made of a magnetic material (Col. 6, lines 19-25), projected from said rotor core along a diametrical direction thereof , and arranged so as to have an air gap in the space of the stator with a gap between the stator and the magnetic path forming member; a field coil arranged in a side of said stator in a state of being wound in a surrounding direction of said rotor core, and forming a closed magnetic path passing through said rotor core, said control poles, said stator core, said bracket and said magnetic path forming member (Col. 6, lines 23-25); and a motor characteristic control means for changing a motor characteristic by controlling at least one of a direction and an amount of current



Art Unit: 2834

flowing into said field coil, by changing a magnetic flux that said field coil generates, and by controlling an effective magnetic flux affected between said rotor and said stator (inherent as described in Col. 7, lines 18-27).

The structure disclosed by Uchiyama fails to show a rotor position detecting means for detecting a position of said rotor; and a current control means for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means.

However, Okamoto discloses a brushless motor wherein a rotor position detecting means (14 in Fig. 2) for detecting a position of said rotor; and a current control means (16) for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said rotor position detecting means (Col. 3, lines 45-65) for the purpose of controlling motor characteristics.

Since Uchiyama and Okamoto are in the same field of endeavor, the purpose disclosed by Okamoto would have been recognized in the pertinent art of Uchiyama.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Uchiyama by using a rotor position detecting means for detecting a position of said rotor; and a current control means for making a current flowing into said armature coil such that a rotating magnetic field is formed between said armature coil and said rotor in accordance with a detected result of said

Art Unit: 2834

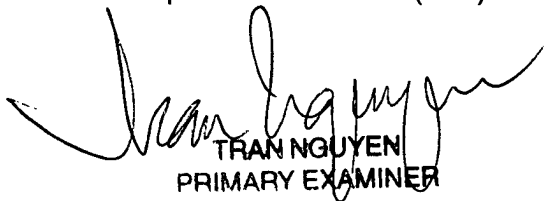
rotor position detecting means as taught by Okamoto for the purpose of controlling motor characteristics.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703) 305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



TRAN NGUYEN  
PRIMARY EXAMINER

HNN

October 30, 2002